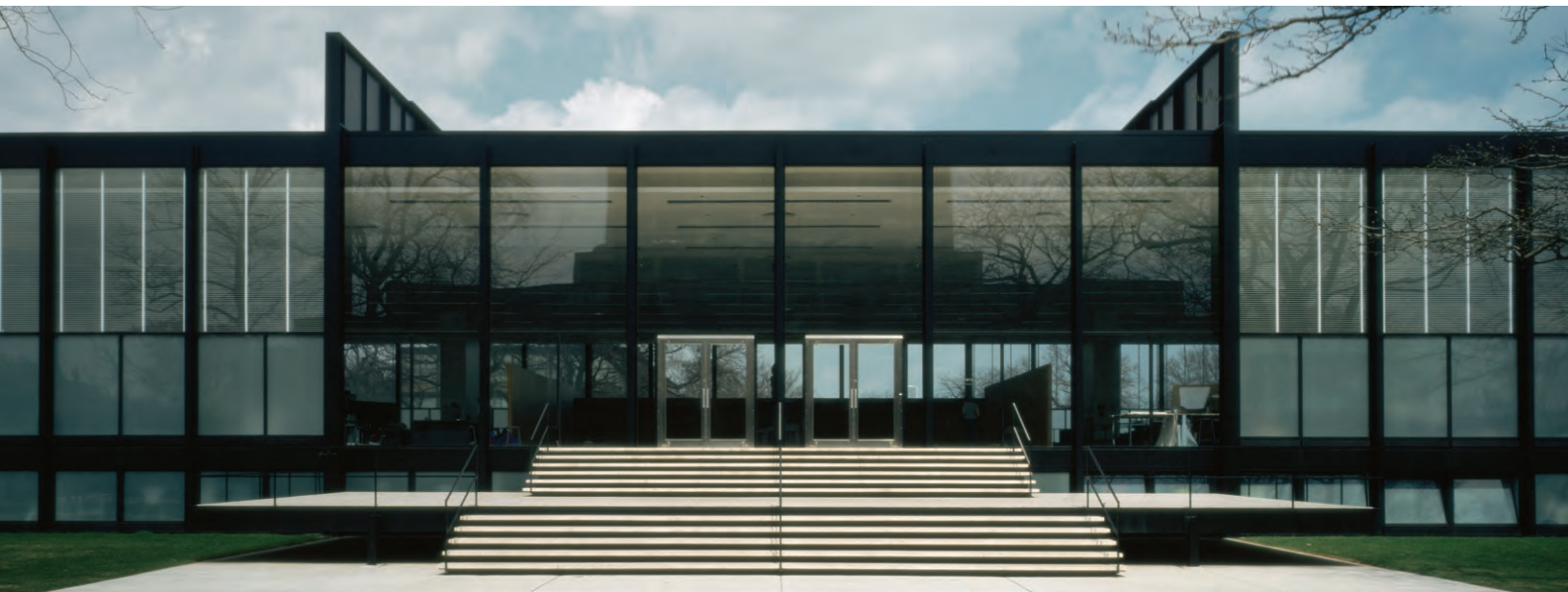




IIT College of Architecture
ILLINOIS INSTITUTE OF TECHNOLOGY



S. R. CROWN HALL

UNDERGRADUATE ADVANCED
STUDIO DESCRIPTIONS
SPRING 2011

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INTRODUCTION

For B.Arch. students in their 4th and 5th years of study, Advanced Studios include design projects focused on space problems, comprehensive building design, landscape design, building siting and master planning. They can encompass large programmed areas such as high-density housing and deal with such subjects as advanced digital practices, development of programmed spaces, cultural institutions, innovative building systems, and sustainability.

Enrolling an average of fourteen students, Advanced Studios challenge students to design complex projects in Chicago and other places in the United States and the world. Recent Advanced Studios have designed transportation buildings, high-rise buildings, campus projects, national design competition entries, design/build/develop projects in response to community needs, and landscape architecture projects.

Approximately twenty different studios are offered each semester. Each studio project is proposed and taught by a member of the College's studio faculty, providing a wide range of expertise in specific building types, advanced building technologies, sustainability, digital applications in design, and contemporary materials. Each year some Advanced Studios travel to complete projects elsewhere in the United States or other countries.

Chimera Marshall Brown Studio

INTRODUCTION

We live in a world of relentless variability, dominated by a mashup culture where anything and everything is a potential readymade, subject to copying, sampling, and remixing. The chimera—the mythical lion-headed goat dragon from classical mythology, best represents this condition. Both monster and mirage, the chimera stands for incongruousness of all kinds.



THE PROJECT

This studio will explore the idea of a transit station as such a hybrid condition comprised of infrastructure, public space, architecture and landscape. The site and basis for investigation will be the Logan Square L stop on the CTA Blue Line and its immediate surrounds. The current station was designed by SOM in the 1970s and accommodates buses, bicycles, and taxis in addition to passenger trains. It also includes a small public plaza of dubious quality, which is of particular interest given that the Logan Square neighborhood is generally seen as lacking in the provision of park space. Our work will dwell on the intersecting spaces of infrastructure, landscape, public space, and architecture.



STUDIO FORMAT

In this studio, students will be responsible for developing an urban design proposal for air rights development at the Logan Square L stop. The semester will be divided into three sections:

1. A sketch problem where we will generate multiple development scenarios for the site. Section 1 will be group work and will involve the production of small sketch models, program studies, and brief narratives about the site.
2. A design development phase where we will develop higher resolution site planning, massing, and landscape strategies along with some critical architectural scale articulations. Section 2 will be group work and will involve the production of final master plans with drawings and models at 1:50 scale, with views and large detail models of critical intersections or architectural instances.

Throughout the studio we will insist on urban design as a preemptive, anticipatory practice that exceeds architecture in its ability to engage and intervene in the socio-political milieu. Taking contemporary culture as the primary context for our efforts, we will explore how design can shape and expand the urban imagination by projecting and formalizing possible scenarios for the future. The main design exercise will involve these core concerns:

1. Programming an urban site based on evolving conditions and projected scenarios
2. The productive integration of transit infrastructure within the urban fabric
3. Production of synthetic 3D representations, including, but not limited to models, collages, and digital graphics

Beyond the development and resolution of the urban design project, we will also promote the development of specific skills, including, but not limited to: scenario planning, GIS sourcing and mapping, urban scale modeling, and BIM collaboration. The final goal is that students will develop an ability to aggressively engage an urban scale design project in a highly collaborative exercise.

Five Dances Vertically Steven Brubaker Studio

INTRODUCTION

This will be an experientially based comprehensive building design studio.

Early twentieth century advances in building technology allowed structure to be separated from enclosure. This gave rise to "The Free Plan," a design strategy that merged the experience of immanent physical, emotional, psychological and mental moments with the material realities of structural, environmental and enclosure systems.

As technology continued to advance, land values rose while society became increasingly complex. "The Free Section" developed, stacking radically differing uses over one another, multiplying the experiential and material possibilities.



THE PROJECT

The studio will investigate these modern traditions. The project site will be the northern half of Printer's Row Park between Federal and Dearborn south of Harrison. The program will stack five separate dance studios: flamenco, jitterbug, classical ballet, modern ballet and tribal. One of the studios will address the ground and one will address the sky. The form, materials and vertical placement of each dance studio will be independently derived from the specific body movements of each dance: body, dance, space.



The five dance studios will total 10,000 sq. ft. Public performances will be held in each studio. Additionally, each studio will have two toilet/shower rooms at 50 sq. ft. each and an isolation tank. The studios will be connected through an open ceremonial stair a minimum of eight feet wide. Each floor will be served by two elevators at 100 sq. ft. each. A "scissors-type" fire stair at 300 sq. ft. per floor will be provided. There will be a building lobby of 500 sq. ft., a receiving dock of 500 sq. ft. and a mechanical room of 1000 sq. ft. The total building sq. ft. will be 20,000 sq. ft.

STUDIO FORMAT

There will be three design phases. An initial sketch problem will be followed by conceptual studies in model form with a conceptual review. The conceptual model will be realized into a 1/8"=1'-0" studio site model followed by another review. Systems and materials will then be introduced for final review. Final requirements will be an all-white 1/8"=1'-0" finished model to fit into the site model, plans, sections, elevations, systems diagrams, illustrations and large-scale details along with the conceptual studies.

The Eyes of the Skin by Juhani Pallasmaa will guide the studio. Five movies will be viewed and discussed to develop critical thinking and to provide architectural inspiration.

Blood Wedding directed by Carlos Saura
Nostalghia directed by Andrei Tarkovsky
The Passenger directed by Michelangelo Antonioni
Breathless directed by Jean-Luc Godard
Rear Window directed by Alfred Hitchcock

Farnsworth House Interpretation Center Frank Flury Studio

INTRODUCTION

This two semester studio will design and potentially build an interpretation center located on the site of the Farnsworth House, which is situated on the banks of the Fox River two miles south of Plano, Illinois. The students will have the unique opportunity to create a piece of architecture in a historically significant context and in an inspirational landscape setting. They will also work in a creative collaboration with Whitney French, the executive director of the Farnsworth House for the National Trust for Historic Preservation. The Farnsworth House was originally built on a seven acre plot of land, but in 1961 Edith Farnsworth purchased an additional fifty-six acres of farmland. This is where the visitor center is located, and this area will be our site.



The Farnsworth House, a one-room, steel-and-glass house designed by Ludwig Mies van der Rohe in 1951, is one of the most important works of twentieth century architecture. Being sculptural in its simplicity, the house represents the ultimate refinement of Mies van der Rohe's minimalist expression. Originally designed as a country retreat for Dr. Edith Farnsworth, the house today belongs to the National Trust for Historic Preservation and is open to the public. More than 10,000 visitors annually make the pilgrimage to this masterpiece of modernism.

The existing visitor center is in desperate need of an additional office space, storage and an exhibition space for artifacts and original furniture of the Farnsworth House. The studio will examine the potential to design and build a temporary and moveable facility, self-sustaining with little impact on the land, which could potentially be an innovative demonstration for visitors.

THE PROJECT

The program for the facility is defined by the client as an 800 sq. ft. building, energy efficient, and environmentally friendly including state of the art technology. The new building will be situated next to the existing visitor center and will create a logical synthesis between new and existing. The studio will investigate technologies of low impact and sustainable construction and prefabricated systems. Built in a rural setting next to a field, the new building has a unique relationship of built form to landscape. The new building must accommodate new technologies to produce its own energy and minimize its waste. Finally, students will have to consider how to best build this new studio in what is an environmentally sensitive situation.

STUDIO FORMAT

In the first semester, students will investigate the history of the Farnsworth House, both in the development and evolution of its architecture and its landscape. This will be followed by an intensive design phase, where students come up with conceptual proposals for the facility. The schemes will be presented to the National Trust for Historic Preservation for approval to move forward to design and build a project.

After the approval of a final scheme, the students will begin with production of permit drawings followed by the production of construction drawings. Parallel with the design process, we will produce full-scale mock-ups of the relevant architectural features. During the permitting process, students will investigate methods of fabrication and begin the design of architectural components.

There will be a rigorous schedule of submissions and critiques, which will include charrettes. Architectural critics, members of the National Trust for Historic Preservation and other relevant critics will attend critiques.

Students will be required to participate in meetings on site with the city and client during and outside of studio hours. Plano is a one-and-a-half hour drive from Chicago.

Construction of the building will begin at the end of the first semester and will continue into the second semester this summer with an anticipated completion date of August 2011.

Forest of Information: New University Library for IIT Sou Fujimoto Studio

INTRODUCTION

A Forest: The Possibility of Architecture as a Locus of Information
**Excerpt from Primitive Future*

In a sense, a forest is a locus in which people interact with information. Here, information cannot be confined to a normative "information," but subsumes everything that ubiquitously surrounds us.

In a forest, myriads of information at diverse resolutions interrelate and coexist: from something that seems useless at the first sight; traces that are inherently imperceptible from a human perspective; conversely, something that is too large to be perceived; both useless and useful; to something ineffable. Architecture made by mankind typically tries to organize this hierarchy of information (which means to impose an order).

However, if we are to make a place analogous to a forest, then we must endeavor towards a locus wherein multifarious information can interact, which will include what might appear at first to be trivial, inconsequential, and meaningless matters. This does not mean its appearance mimics a forest nor this effect is achievable by merely amassing something in a grid. The locus imposes an order that simultaneously negotiates, stimulates, catalyzes various interactions and amplifies multiplicity of information. These information do not simply exist but motivate people in such a way that their mastery will lead to discoveries of deeper truths. This will stimulate various "interactions of humanity and information," which will open our eyes evermore to new relationships.

Such a place must be a forest-like locus. There, we can find an increasing potentiality of rich developments enabled by the synchronicity of real space and information space.



THE PROJECT

The studio project seeks to design a new library for IIT.

The library is akin to a forest, in which numerous and diverse amounts of information coexist. In this library, we will exercise methods and theories of how to manifest (or architecturalize) this notion of "interactions of humanity and information."

STUDIO FORMAT

The project will be largely divided into three phases:

Phase 1 (approximately 2 weeks)

Phase 1 will focus on conceptual development and will establish a clear vision for the library of the future. The students are asked to formulate three sets of keyword and image which he/she feels appropriate to consider the library of the future. This study shall be accompanied by a descriptive text which will provide clues for how this will be translated into an architectural form. One is asked to approach the exercise from numerous perspectives: formally, environmentally, programmatically, structurally, urban, and so on. From these views, the project seeks to reveal many possibilities of the library of the future. The studio shall work together during this phase to complete a group site model (physical, s=TBA), for the common purpose of presentation and communication in the studio sessions. Each student will undertake initial volume studies (physical model).

Phase 2 (approximately 2.5 weeks)

Phase 2 will, from the discoveries and visions attained from Phase 1, develop and plan the new library.

At this stage, the program of the building will be formulated and the conversion from word and image into form will be undertaken. This process will be undertaken simultaneously in sketch/drawing and physical volume models. The task is for one as an architect to envisage from abstract clues and visions into a formal outcome, expanding upon the roots of architecture and the realities of man. The studio anticipates a new conception of architecture which will either loosely or rigorously change or liberate us from the conventional way we live today.

Phase 3 (approximately 9 weeks)

From the earlier design stages (Phase 1/2, schematic design), one is to follow the design into the design development phase and to the final presentation.

Food Pantry/Urban Farm Prototype Tom Hoepf and Andrew Metter Studio

INTRODUCTION

The studio will propose a project to design urban solutions which address a more sustainable method for the production and distribution of Food For The Hungry in the City of Chicago.

Most of the existing large scale urban food depositories/pantries are based on a model of food production and distribution which has not changed in the last forty years. It is essentially the same model used by large private grocery chains, involving off-site food acquisition (either through production or donation) and dissemination to large distribution centers. In some cases, these distribution centers are then accessed by either individuals or organizations which truck the goods to smaller, local urban distribution points. In other cases, patrons are required to visit the large facility, which is typically in a suburban, less accessible, location.

Moving forward, this model will be unsustainable, and requires rethinking and re-design, from food production techniques and location, to more innovative, mobile, and finer-grained distribution strategies.

This studio proposes to examine this issue, through the design of a prototype food pantry/urban farm which will examine design options with regard to three issues:

- a. Food production
- b. Food distribution
- c. Scalability

Food Production:

From technical issues associated with food production such as hydroponics, inflatable greenhouses, and waste heat re-use to soil remediation, we will examine technical constraints on urban farming proposals.

Food Distribution Typology:

We will examine the design of a neighborhood food pantry consisting of approximately 30,000 sq. ft.

The studio will attempt to develop a kit-of-parts solution which can be adapted to varying urban conditions.

Scalability:

From a vacant infill lot to a corner urban condition, to city-block tracts of land, the studio will examine the scalability of the design proposals. Program elements will adjust to varying site conditions.



THE PROJECT

1. The project is an investigation of the constraints and opportunities which will inform a design for a food pantry/urban farm proposal and the production of a prototype design. The site will be in the City of Chicago.
2. A prototype design for an urban farm/food pantry which will be documented through drawings describing the architecture, outlining prototype options, structural systems and mechanical strategies. The studio will consist of two groups, each addressing a different prototype site.
3. The program will consist of a food pantry, community room, food storage, administrative offices, nutrition class areas,

community kitchen, volunteer lockers, fifteen emergency SRO rooms, and an urban farm plot.

STUDIO FORMAT

As a comprehensive building design, the studio will include:

— Pre-design (two weeks)

Precedent—Case studies

Site research and documentation including computer and physical modeling

Context—Land use, existing building stock and infrastructure, local demographics, base maps, sustainable strategies/LEED

— Programming and research analysis (one week)

Program review with officials from the Northern Illinois Food Bank

Field trip to Northern Illinois Food Bank and Greater Chicago Food Depository

— Design concept (two weeks)

Including strategies for urban farm, and proposed building program integration

— Schematic design—Individual building design project (four weeks)

— Design development—Building design project and documentation (six weeks)

Performance Barge Gerald Horn Studio

INTRODUCTION

The studio will explore architectural and structural solutions that will provide an expanded stage with supportive backdrops and sound systems for a variety of performances from a full orchestra to a lecture. The stage is on a moving barge that travels through the Midwest by rivers and lakes.

THE PROJECT

The given steel plate barge is 16'8" wide and 60' long, 13'4" depth and floats 3'4" above water.

Program:

Provide living space on the barge for a family of four [mother, father, daughter and son (college age)]. The family will provide all labor required for the expansion of the structural elements needed for performances.

Since the barge will travel through locks and under bridges, the maximum height is 16'8" above water, the width is 16'8" and the length is 60'0".

For six months (November through April) the barge will be docked in Montrose Harbor where performances will be held. The project will design seating for 120 people and a site setting for the barge.

STUDIO FORMAT

Presentations will be competition-style, four mounted 20" x 20" boards will be used for visual presentation to the jurors.

High-Rise Hotel in Reinforced Concrete **Chris Karidis Studio**

INTRODUCTION

The studio project will be a reinforced concrete high-rise hotel complex located in downtown Chicago. Emphasis will be on function, construction techniques, and costs. The student will be responsible for the integration of all disciplines related to high-rise buildings. This is a comprehensive building project investigating but not limited to programming requirements, zoning analysis, building codes, structure, space planning, mechanical and electrical systems. The studio will also look at the influence of marketing strategies as a factor in hotel planning.

This course will help the student to understand:

- Building design as both science and art
- Building standards, methods, processes, building codes, and zoning ordinances
- Construction materials, framing systems, assembly systems, and their behavior
- The history of construction
- Good planning and programming procedures
- The implications of design decisions

THE PROJECT

After thoroughly investigating the aesthetic, technical, and economic considerations, the student will develop a comprehensive, rational, buildable solution.

STUDIO FORMAT

The studio will include lectures, drawing assignments, required readings and handouts. The student is expected to actively acquire supplemental information from sources outside the studio.

The studio professor will continually monitor each student's progress at his/her desk and critique the work as needed. There will be both a mid-term review and a final review. In the final review, the student must demonstrate that he/she has fully investigated all areas of concern. In addition to the mid-term and final reviews, the student's grade will be based on attendance, class participation, neatness, accuracy, completeness, and appropriateness of design.

Wrigleyville Boutique Hotel Jackie Koo Studio

INTRODUCTION

A high design concept is a requirement in a contemporary hotel project and often is so important that it becomes the primary means of branding the hotel. Due to the specificity of the hotel program, one of the great challenges in hotel design is creating a building that is more than just a product of its programmatic constraints.

THE PROJECT

In this building studio, students will design a boutique hotel. The site is a parcel of approximately 6,500 sq. ft. located in the Wrigleyville neighborhood of Chicago, very close to Wrigley Field. Students will create a high-concept brand identity for the hotel and adapt its essential components to develop a hotel proposal that will unite the guestroom, typical floor, interior public space and building design.

The exterior of the building will be completed to a schematic design level. The studio will also focus on the interior design of one critical space and one guestroom. Students will be introduced to hospitality interior design concepts and these spaces will be developed to a high level of detail including selection of furnishings, materiality and lighting.

STUDIO FORMAT

After a brief research phase, the format of the class will include frequent pin-ups as well as one on one desk critiques. The ability to express design concepts, color and materiality graphically in rendered form is essential to completing this studio successfully.

The Materiality of Space Ronald Krueck and Thomas Jacobs Studio

INTRODUCTION

Our studio is a vertical space problem that focuses on modulation of space, amplification of light, resolution of scale, fulfillment of proportion, purpose of structure, authenticity of material, and richness of experience. The interior spaces should extend and integrate the exterior spaces while controlling access to and modulating the space between all of the elements. The structure is to be efficient, eliminating excessive mass or redundant components, and should be repetitive except as logically interrupted or distorted by function. Design principles that take advantage of the conditions of the natural world shall be applied to minimize the design's environmental footprint.



THE PROJECT

We will develop a Center for the Advancement of Humanities on a generic southeast corner site in Chicago which could be likened to an artist's empty 3-dimensional canvas. As the project is defined, internal pressures may occur that will disrupt the original 30'x30' grid; however, the final solution should bring these forces into resolution retaining a harmonious composition. The interior of the Center for the Advancement of Humanities and its exterior are equally important and should be developed as one. The specific program we will follow is composed of five elements. The nucleus of the building is a space dedicated to the appreciation of timeless ideas and values and open-minded dialogue on contemporary issues, while its connecting tissue is a space for entry and circulation (i.e. lobby, including reception and gathering). A space for displaying (exhibit gallery), a space for presentations and performances (multipurpose), and a space for work and study (office/library) complete the interior program. A programmable outdoor space is to be developed and integrated as well. The project square footage can vary from 5,000 to 30,000 sq. ft., and the height shall be a minimum of four levels.

The materiality of the project is of great importance, and shall be developed from the beginning, establishing conditions such as transparent, translucent, opaque, textured, and smooth as integral qualities of the design.

STUDIO FORMAT

Architecture must be the result of a rigorously investigative process. Our pedagogical focus revolves around the process of architectural decision-making, which enables studio members to evolve from irresponsible opinion to true responsible judgment. We seek to equip studio members with the ability to detect and avoid chance and arbitrariness in order to arrive at rational clarity and intellectual order.

The design process will start with an investigation and interpretation of contemporary works of art, which will result in the development of a spatial icon (physical, 3D model). The icon will serve as a catalyst for the development of the project.

We foster a collaborative studio culture, which emphasizes the importance of immersion into architecture among peers with a passion for discovery and learning.

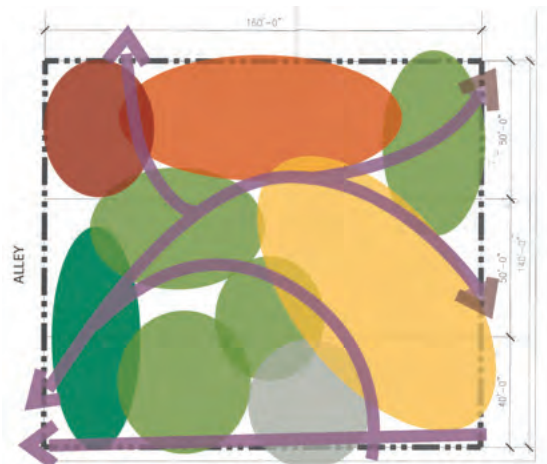
IIT/EDYC Sustainable Community Project Eva Kultermann Studio

INTRODUCTION

This studio will engage in the design and development of an ecological educational facility in collaboration with Elliott Donnelley Youth Center (EDYC), Architecture for Humanity of Chicago (AFHC) and other community stakeholders. The collaboration's mission is to introduce students and the larger community to an understanding of buildings, their surrounding landscapes and communities as systems embedded in ecology and culture. The promise of sustainable living, the requisite science and technology employed, and the potential for improving the quality of life in urban communities, are some of the discoveries this studio hopes to make.

THE PROJECT

The studio will aggressively address sustainable design and construction technologies by developing proposals for an ecological educational center, located at Indiana and 40th Street in the Bronzeville neighborhood of Chicago that will act as a demonstration project. The centerpiece of this new project will include a 3,200 sq. ft. classroom building with a solar greenhouse, organic gardens and native landscaping. A key objective is to utilize the building as a year-round environmental literacy training facility for youth and families. The organic gardens will serve as a source for healthy, life-sustaining food, as well as native plants. The aspiration of the project is to develop design solutions that integrate sustainable design with healthy construction, social and cultural responsiveness, affordability, and design excellence.



STUDIO FORMAT

The initial part of the semester will be spent conducting research and allowing students to develop individual proposals for the given program. Students will present initial design ideas for review and selection of a single scheme to be fully developed. Design development will occur in a studio team environment. Each student will be individually responsible for the full design resolution of one or more project components. Once the overall structure of the proposal has been established, design and limited construction documents suitable for exhibit and submission to the city building inspections department will be generated by the studio.

The final weeks of the spring semester will be spent in the construction of a demountable temporary structure that serves to introduce the community to the physical possibilities of the proposed project. The construction of the EDYC pavilion will be completed by IIT and EDYC students during a "barn raising" community event to coincide with the College of Architecture's Open House.

This is a comprehensive design studio requiring a fully developed final design that incorporates site, structural, material and environmental resolution.

The Vertical Context: Universal Sustainable Space Peter Land Studio

INTRODUCTION

This studio will take a fresh look at the high rise. It will reexamine the conventional tall building in the form in the light of new ideas.

THE PROJECT

The studio's emphasis will be on inventiveness. Design clues may include advanced structures, utilization of renewable resources for electrical energy generation, including wind, solar, and interior planting for beneficial climate modification. Design features may include wind turbines, photo-voltaic, "smart skin" and kinetic surface articulation, etc. An important objective of the studio is to advance current knowledge in an area of the project concept.

STUDIO FORMAT

Students cannot be committed designers unless they are informed and have knowledge of rational, inventive projects being done at an international level. Ongoing discourse with the professor will aim at informing students, guiding them to the relevant projects and professional literature and assisting each student in preparing a research compendium. The research phase and compendium is an important initial learning part of the studio, extending over about three weeks.

As in most research based work, design development will shape itself as it proceeds and will be guided by the professor. The studio will be shaped to pursue a range of innovative concepts in a range of materials. The studio end product will be high quality digital drawings describing the design and selected key details. It is recommended to have knowledge in Rhinoceros for 3D modeling.

Healthcare Planning/Design Chris Liakakos and Andrew Mazurek Studio

INTRODUCTION

The goal of this studio is to introduce students to the fundamentals of planning and design of healthcare facilities including:

- Familiarization with current hospital operations concepts focused on optimizing patient experience as well as efficient use of staff, equipment, and facility resources, and to explore their planning and design implications
- Concepts and issues related to the creation of healing environments
- Overview of basic regulatory requirements
- Basic technology infrastructure requirements
- Basic LEAN methodologies in the planning of hospital operations as well as their facility planning and design implications

THE PROJECT

The studio will be organized around the planning and design of a fifteen bed, approximately 50,000 building gross sq. ft. critical access hospital to serve a small rural/resort community in upstate New York along the St. Lawrence River. Whether the project is a one or two story building is one of the issues to be addressed through the planning/design process.

STUDIO FORMAT

The final presentation of the project will include:

- Program concepts overview/summary (organizational concepts, adjacencies, building and site circulation, major process flows, etc.)—graphic/diagrammatic presentation
- Site plan clearly illustrating placement of buildings, building entrances, roads, parking, significant/program related landscaping concepts, and other significant project elements
- All appropriate floor plans at 1/16"–1'-0" or 1/8"–1'-0" scale including below grade, if applicable. Structure indicated on floor plans
- Detailed floor plans and interior elevations at 1/4"–1'-0" or 3/8"–1'-0" of key project rooms (including at least a typical patient room, exam room, and either an imaging room or surgical operating/procedure room); 3D interior digital models can be substituted at student's discretion
- Aerial map incorporating project concepts
- Site and building section(s) required to clearly illustrate the solution; same scale as base building floor plans
- Diagram illustrating basic MEP concepts focusing on placement of key system components and their distribution
- Exterior elevations and/or digital models

Project, section and conceptual study models may be included at the student's discretion but are not required.

Rethinking Sites of Production Mary Pat Mattson Studio

INTRODUCTION

Energy farms. Fish farms. Tree farms. Wind farms. Solar farms. Water farms. Food farms. Compost farms. Fill-in-the-blank farms! Building and landscape practices are full of farming concepts signaling a renewed focus on the productive role of urban land especially in places of evacuation and transformation. Poised at the precipice of a population, food, climate, and energy crisis, long-term comprehensive strategies for local production are needed to adapt our cities to massive changes forthcoming. In this context, our design studio aims to 1) broaden conceptual ideas of urban productivity that address and layer a multitude of biological, social, and economic interests, concerns, and needs, and 2) identify urban physical/spatial systems into which a site-specific and scalable set of design tactics and strategies become capable of invigorating action and investment.

THE PROJECT

The selected ground for our work lies along the Englewood Embankment, an abandoned remnant of bermed rail-bed stretching 1.5 miles through one of the most desolate yet potentially transformational neighborhoods in Chicago. With the embankment as a spine for the project, we will identify new places and forms of production tied spatially, programmatically, and structurally to the linear infrastructural landform of the embankment. We will radically re-think, re-program, and re-construct abandoned and suppressed single-purpose surfaces and structures into spaces of flow, production, connection, inclusion, and exchange.

Currently a divisive barrier, the embankment has the potential to re-connect and re-stitch a neighborhood in need of economic and social resuscitation. In addition to identifying the Englewood neighborhood as a future production zone, the City of Chicago has recognized the embankment itself as a unique abandoned infrastructure that will play a role in future investment and revitalization of the area. But what is the embankment? What role will it play? And what is its relationship to a program of productivity around it?

While a logical program for this studio and site might be food production, other program investigations are also encouraged. For example, production of energy, nutrient cycling, clean water, et cetera have the potential to further heighten the capacity of the proposed production site(s), and may combine well with other student proposals. Collaborations are welcome and encouraged in order to strengthen an understanding of the co-creative and interdependent nature of the design problem while also fostering methods for a collaborative process of design discovery. Hence, students from both the landscape and architecture programs are encouraged to bring specific interests and design inquiries.



STUDIO FORMAT

The studio will rely on an initial phase of shared, investigative, interpretive research which will lead to both collaborative and individual design proposals. Design analysis will include transportation infrastructures, past and present patterns of life, food and resource distribution, forms of energy production, social histories, ecological conditions, and points of access and connection. We will meet with the city representatives as well as local land trust and community members to gain further knowledge, background, and insight for the project.

Studio assignments will vary from interpretive studies to scaled drawings and models. By splicing various media and methods of measuring and recording site plans; existing conditions; geology, hydrology, and vegetation maps; social histories; and city records, we will identify latent forces and patterns that frame new interventions. At least two days per week will be spent in studio. One day per week is anticipated to be spent on-site and/or in meetings. Readings and lecture/presentations will be interspersed throughout the semester.

Architectural Design and Computation Thomas McLeish Studio

INTRODUCTION

This studio is about clearly articulating and expressing design decisions such that they may be acted upon using computational tools. The foundation for this requires understanding the context, goals, parameters, variables, and constraints for design decisions. What are the means and modes of operating in and between the physical world and the virtual world? How do we understand the relationship between the two? How do I make the physical virtual, or the virtual physical?

Students will describe and capture a process for designing a series of installations, share and act on these processes, and fabricate prototypes.



THE PROJECT

The architectural problem we will address are the spatial and programmatic opportunities of the Chicago Public Transit systems. We will propose new prototype designs for bus stops and L stations. Students will study and model environment, site, human behavior, program, and material in generating tools to resolve form.

STUDIO FORMAT

While many languages can and should be used for describing process, we will focus on a computational language as expressed in the Grasshopper plug-in for the popular modeling application Rhinoceros. We will describe goals, assumptions, requirements, and process in text and diagrams. This will be translated into actionable models using Grasshopper and Rhino.

Students are not required to have any familiarity with Grasshopper or Rhino—we will discuss syntax, semantics, and logic within studio. Students are required to have the willingness to push themselves if this is unfamiliar territory, and share their expertise as it is developed.

Coursework will include group projects as well as individual responsibilities, the balance of which will be determined through the skills and interests of the studio members. Studio class time will include tutorials on Rhino, Grasshopper, process diagrams, and storyboards. Students will be expected to build physical models and fabricate full scale components/prototypes individually and in teams.

We will explore fabrication using CNC tools including the laser cutter and three axis mills.

Urban Modular Housing Rick Phillips Studio

INTRODUCTION

This studio will focus on the demand for innovative affordable housing in Chicago. Two staggering facts stand toe-to-toe with no solution in the works. Firstly, most Chicago families cannot afford to own their residence. Secondly, there is little interest in over 20,000 city-owned residential lots, which the city will sell well below market to any who will commit to building affordable housing. Why has this great opportunity gone unanswered in the light of such obvious need? The answer lies in the high cost of site-built construction, which makes the creation of an affordable house in the city almost impossible. We will work with the hypothesis that modular construction (modules fabricated in a factory and delivered to the site) reduces the cost enough to make affordable housing in the city financially workable. We will also work with the hypothesis that there is ample room for innovation, using existing affordable building methods and materials, without having to revolutionize the industry. The studio will focus on bringing this innovation to an industry sorely in need of creative solutions and a fresh new approach to affordable housing in Chicago.



THE PROJECT

The program will be for the design of a single-family residential prototype that conforms to the zoning requirements of the typical in-fill single lot in Chicago. Many, if not the majority, of the available lots are R3-zoned parcels between adjacent buildings. In most cases the lots are too small to be subdivided and/or rezoned, and they are dependent on an existing infrastructure of utilities that would be too expensive to relocate. Therefore, the program will call for working within existing lot lines, zoning requirements, and utility connections. Designs will have to meet the specification and size requirements of modular housing and qualify for the Green Homes for Chicago program. We will place special emphasis on innovation driven by new approaches to affordability, life style, and sustainability. We will also place an emphasis on the design of the entire site from street curb to alley, circulation through the site, the creative use of outdoor space, landscaping, ground surface materials, and site usage of storm water.

STUDIO FORMAT

The studio will be a “space problem” studio, but being small in program, will achieve an atypically high level investigation of details, structural and mechanical systems, and materials. Students will learn to create a set of scope documents sufficient for preliminary pricing and engineering from a modular housing company. The company will supply students with typical manufacturer’s details, materials, and specifications to aid in the assembling of a set of preliminary pricing documents. Students will craft basswood models as well as computer 3D models.

We will begin with a one-day field trip to a nearby manufactured housing factory in Indiana. Students will familiarize themselves with industry and code requirements, site planning options, and cost and energy-saving opportunities before beginning design. Once design begins, individual crits will be frequent, and group crits planned at targeted stages of the design process. We will encourage a high level of participation through in-house pin-ups and discussions.

Low Income Cluster Housing Peter Roesch Studio

INTRODUCTION

There is a need for efficient inner city housing for young and elderly, including an outdoor space for each unit.

Titles for discussion:

- High cost of distance
- The charm of density
- Energy crisis or waste consumption?

THE PROJECT

The Concept—The idea that a system of housing, or clusters, can be designed and reproduced on a variety of sites is to be explored. These “site non-specific” housing clusters would help to create the charm of density that exists within an urban setting.

The Site—The housing clusters which are to be developed would be presented within a site chosen by each individual student. This will give the students the opportunity to show the flexibility of the systems on different sites.

The Program—A “cluster” of houses will be defined as: A reproducible unit that contains between 4-8 single family dwellings of varying size. The idea that these houses could be produced by industrial means, and placed upon different sites with a high density of population, should be the driving force behind the design.

STUDIO FORMAT

Each student shall decide on:

- The number of dwellings within a cluster
- The size of each house within a cluster (example: one 2 bedroom dwelling, three 1 bedroom dwellings and one studio dwelling)
- Design should start with a single “cluster” and move towards the combination of many clusters on the student chosen site
- The flexibility of a cluster should be a driving force behind the design

TEOTWAWKI: Survival Retreat **Karla Sierralta Studio**

INTRODUCTION

In the last decade society has dealt with challenging times and catastrophes both natural and man-made. With a decaying world economy and military and political turmoil around the world, we ask ourselves what the next decade will hold. Apocalypse? Maybe, maybe not. One thing is certain: the future deserves our attention.



With an ever increasing world population, and the majority of people living in urban settings, societal collapse would have much more dramatic consequences for those living in cities. If the grid goes down, within a week cities could become unlivable. We live in a world dependent on high maintenance infrastructure. A single catastrophic event can cause TEOTWAWKI (The End of The World as We Know It).

Emergency preparedness schemes are being planned all over the world by both government agencies and by those living on the fringe of society. Is it not prudent for everyone to prepare for a TEOTWAWKI event? How can a possible mass exodus to the rural landscape be designed?

The studio will focus on the "Survival Retreat" as a future architectural typology in rural landscapes surrounding large urban populations.

THE PROJECT

Each student will design a "Survival Retreat". The retreat will be located off-the-grid, a gas tank away from the (epi)center of Chicago. The refuge is to have a Pre-TEOTWAWKI function and to double as a "survival retreat" post-TEOTWAWKI. The facility will host a mix of programs in a single structure, including but not limited to: housing accommodations for multiple families, communal spaces, a library, food production spaces, areas for quarantine, emergency services and storage.

The studio will meet the requirements of a comprehensive building design studio. The students will produce a comprehensive architectural project based on a building program and site that includes development of programmed spaces, demonstrating an understanding of structural and environmental systems, building envelope systems, life safety provisions, wall and building assemblies and the principles of sustainability.

STUDIO FORMAT

The semester will be divided in five phases:

1. Research and Discovery: Students will work individually and in groups to investigate the site, the program, materiality and precedents through research, readings and case studies. Findings and conclusions will be presented to the group and will inform the identity of each individual project.
2. Conceptual Iterations: Through the study of alternative solutions, each student will develop a concept, idea or identity that will guide their design process.
3. Schematic Development: Designs will develop formal, spatial, programmatic, contextual and environmental strategies.
4. Design Development: Projects will integrate environmental, structural, and building envelope systems.
5. Presentation: Students will graphically design the final presentation boards to best communicate their ideas.

All phases will require the intense production of handmade and computer aided physical and digital models, drawings and diagrams in two and three dimensions. Studio dynamic will involve one-to-one desk crits, presentations, discussions and weekly group pin-ups. Guest critics and consultants will be invited to selected weekly pin-ups, the midterm and final presentations.

Collection Case Werner Sobek Studio

INTRODUCTION

There is something sensational about collections—be it collections of automobiles or records—they show, at the same time, an irrational obsession and a rational order. They organize what has been dispersed around the world. They combine parts into a whole. Above all, they manage to create an expressive form for their content. The studio develops such expressive, architectural forms, spread over the City of Chicago, each hosting its own collection.



THE PROJECT

Within a cubic shape of 12 meters a structure is developed that not only shelters, but also presents a collection to the public. Students will find an appropriate site in the City of Chicago, reflecting the urban situation and context. They develop their concept with a collection and find a consequent and communicative architectural form. Thereby, the façade is of great importance, in that it should function as a kind of interface. This interface might show or hide the collection, it might turn it into a demonstration or a secret. It might reflect formal characteristics of the collectibles, or it might be a treasure chest, hiding what is inside. Experimenting with formal procedures of abstraction and reduction, the structure will become an innovative collection case.



STUDIO FORMAT

The studio will teach basics of scientific and conceptual work, and a fundamental understanding of all aspects to be considered in the design of an innovative and sustainable construction. Besides an introductory lecture about the logic of collecting, there will be input on structural aspects and questions in the course of the studio.

The building design itself will first be done on the basis of sketches and simple models. The final presentation will include a model (scale 1:100) and drawings showing plans, elevations and details, the structural system, and sustainability concepts. The materials which will constitute the building's appearance should be presented as well by using a material box.

Space Problem Arthur Takeuchi Studio

INTRODUCTION

The space problem course at IIT shifts the study from buildings to that of space. Lao Tse (sixth century B.C.) said, “the reality of a bowl is not in its wall or material but in the void contained within.” The modern manifestation of space, particularly the “free plan” is linked to the development of steel skeleton construction which made possible the free disposition of walls that until then were constrained by their millennia-old structural role. Freed of this, walls and partitions become nearly pure spatial elements. Floor planes likewise become space elements giving shape to space in the vertical context. The possibilities for new artistic expression that were vaguely suggested in the formative phases of the technical achievement now emerge in clearer form. In contrast to compartmentalized space as in traditional buildings, space now becomes an ensemble of freely articulated space segments, open, transparent and flowing—ultimately liberating. The course this term deals with the Space Problem related to both the vertical and horizontal extensions of space.

Along with the study of space is the study of materials, their expressive qualities and role in accentuating and enhancing space. Parallel to the technical development in construction was the revolutionary development of a new form of paintings and sculpture. Perspective disappears and a strong turn to the flat plane became nearly universal, suggesting a new relationship to architecture.



THE PROJECT

The space problem is an advanced study of architecture focusing on the “free plan,” its language, and grammar.

STUDIO FORMAT

The study is in two parts; the first: a series of exercises to make clear the rudiments of space, its formation and syntax; the second: the application of basic spatial principles to the solution of a project encompassing functional, and programmatic requirements. These are conducted primarily in three dimensions using models and a series of one-on-one critiques. Analysis of a historically important project and reading assignments supplements the main coursework.

Cultivating Parametric Seeds **Ross Wimer Studio**

INTRODUCTION

In recent years the digital realm has emerged as not only a potent influence on how architecture is delineated, documented and constructed, but how it is conceived. Within SOM, our black box studio has been exploring the creative potential of generative design systems that rely on parametric relationships. Using parametric models, forms can be made that respond to climate, view, program, etc. These forms or formal relationships can be rapidly created and evaluated for their performative and aesthetic behavior. This studio has been developed to test these tools through the program of an observation platform.

THE PROJECT

The initial digital models will be developed with the assistance of the SOM Black Box Studio. These parametric “seeds” will be cultivated to respond to the site, climate and program.

STUDIO FORMAT

Phase 1: Typology Research

The first week of the term the studio will engage in research. Historic examples of observation platforms and their structural design will be the focus. An initial analog exercise using traditional tools to investigate the process will be introduced.

Phase 2: Digital Training

A series of exercises in the second week will introduce the software and additional training will continue through the semester. The parametric seeds will be introduced.

Phase 3: Design

Student work will be developed through a series of desk crits, pin-ups and reviews. SOM design, technical, engineering and Black Box staff will provide a broad spectrum of experience for the critiques.



Tall & Green: Seoul Overseas Studio **Antony Wood Studio**

INTRODUCTION

Many tall buildings historically seem to have been designed as either vertical extrusions of an efficient floor plan, or stand-alone pieces of high-rise urban sculpture. In both cases the only relationship with the urban setting is a visual one, with the tall building usually dominating. This has led to the syndrome of tall buildings as “isolationist” architecture—stand-alone, non-site specific models that are readily transportable around the cities of the world. This has served to create an alarming homogeneity across global urban centers—a creation of a “one-size-fits-all” skyscraper mush. This is especially true of cities in developing nations, where the imported, rectilinear, air-conditioned box is the standard norm. In addition, tall buildings have become synonymous with the greatest excesses of energy expenditure—in both embodied construction and operation. In short, these tall buildings are contributing to the degradation of both the local (cultural) and the global (through climate change).

It does not, however, need to be this way. In the need for denser, more concentrated sustainable cities which reduce the loss of green space and energy-intensive transport and infrastructure networks, tall buildings have an opportunity to reinvent themselves as the typology for a sustainable urban future—focused centers of live, work and play with innovative forms, technologies and environments to face the challenges of the future climate-changed world. This new typology needs to be inspired also by the cultural and vernacular traditions of the location. This is especially important in maintaining the cultural integrity and continuity of any urban domain, but especially in developing countries where the embrace of western models is both enthusiastic and rapid. In short, tall buildings need to be inspired by place—both culturally and environmentally.

THE PROJECT

This design module seeks to explore the themes outlined above to find alternative design approaches for tall buildings—to create high-rise buildings that are inspired by the cultural, physical and environmental aspects of place. The site for this project is a real site being developed by Daelim Construction in the Seoul Forest district of the South Korean capital, not far from the Han River. Students will work in pairs and be asked to undertake an urban study of the area to determine an appropriate response for both the program and design of a tall building relative to the site. The studio will visit Seoul and engage with the real issues of the site, city and culture. The client for the project will be the real client for the redevelopment: Daelim Construction. We will also have an engagement with students and professors at Korea University.

STUDIO FORMAT

The aims of the project are:

- a) To explore and resolve the issues associated with the placing of a tall building in a unique cultural-urban setting
- b) To explore how that tall building can be inspired by the cultural, physical and environmental aspects of site
- c) To determine the programmatic brief for that building, based on micro and macro site/urban studies
- d) To understand the issues involved with designing a multi-level building containing possibly differing functions
- e) To understand how considerations of structure, environment, servicing, etc. are as vital to the success of the building as form, materials, aesthetics, etc.
- f) To develop the design of the building in some detail in order to properly investigate and understand the relationship between the design and the making of spaces and places
- g) To develop the design of an aspect of the building in technical detail so as to portray at large scale the relationship between space, structure, skin, etc.
- h) To explore appropriate oral and graphic presentation

Rocky Mountain Hut David Woodhouse Studio

INTRODUCTION

Architecture shapes experience. We build what we are. We are what we build. But how should we shape architecture to shape this experience? This studio will examine a rigorous project typology—the mountaineer's hut—characterized by the singularity and intensity of the opportunities it provides to define our experience of, and our relationship to, the natural landscape and then explore the various resources we can use—the pragmatic contingencies of program and utility, site and climate, tectonics and craft; the promptings of our memories and intuitions; as well as our study of the past, involvement in the present and hopes for the future—to create an architecture that will shape this experience from the largest conceptual level to the smallest physical detail.

THE PROJECT

Rocky Mountain Hut is a building along the Continental Divide National Scenic Trail at Haynach Lakes (elevation 11,033ft) in Rocky Mountain National Park in Colorado. It will provide year-round food and shelter to mountaineers, climbers and hut-to-hut hikers. The hut will include recreation facilities (lounge, dining room, sauna with soaking pool), sleeping spaces (eight private double rooms and a shared Matratzenlager or mattress room for 24 people), as well as living quarters for hut staff. The hikers' needs are simple but the resources available to meet them are scanty, so the project will explore living light/building light. The hut will connect hikers to the beauty, but shelter them from the rigors of the natural surroundings; investigate the transience of the hikers' experience of the site's unchanging actuality; and fully exploit sustainable building strategies to ensure that the hikers' presence does not spoil this unspoiled wilderness.



STUDIO FORMAT

Studio members will produce, at the design development level, a comprehensive architectural project based on a building program and site that includes development of programmed spaces, demonstrating an understanding of structural and environmental systems, building envelope systems, life-safety provisions, wall and building assemblies, and the principles of sustainability.

In the early stages of the project, the studio will be organized as a group (or as several smaller groups) for research, case studies, and site investigation which will identify a shared conceptual framework to be used by all studio members. Once this shared foundation has been laid, the emphasis will shift to one-on-one desk crits and meetings between the studio member and the professor as each studio member's own concepts are identified, researched, assessed, and developed. The goal will be to foster a creative process that is consistent and controlled while the work created is fresh and surprising. Architecture must be the result of a rigorously investigative process. Throughout the studio, the focus will be on the practice of architectural decision-making, which enables studio members to evolve from irresponsible opinion to true responsible judgment, equipping them with the ability to detect and avoid chance and arbitrariness in order to arrive at rational clarity and intellectual order.



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